

WHAT IS CLAIMED IS:

1. A method for rapidly acquiring and tracking a threat using a directed countermeasure system without using a two field-of-view system, comprising the step of providing a tracker having fixed optics having a variable focal length, the focal length shorter for off-axis objects and longer for on-axis objects, whereby acquisition times are minimized and alignment problems associated with two field-of-view systems are avoided.
2. The method of Claim 1, wherein the field of view of the fixed optics is wide corresponding to the shorter focal length and is narrow corresponding to the longer field of view.
3. The method of Claim 2, wherein an object is magnified when in the narrow field of view over that object when off-axis.
4. The method of Claim 1, and further including imaging objects by the fixed optics onto an IR focal plane array.
5. The method of Claim 1, wherein the fixed optics include non-linear optics.
6. The method of Claim 1, wherein the fixed optics include Foveal optics.
7. The method of Claim 1, wherein the fixed optics intentionally provide barrel or other distortion.

8. The method of Claim 1, wherein the fixed optics have the characteristic of a distorted field of view.
9. The method of Claim 1, wherein the fixed optics include a lens which has less magnification at its periphery.
10. A method for providing a directed countermeasure system with a wide field of view for threat acquisition and a narrow field of view for threat tracking, comprising the step of:

providing the countermeasure system with a tracker having non-linear fixed optics, whereby no moving parts are utilized to provide for the wide and narrow fields of view.
11. The method of Claim 10, wherein the non-linear fixed optics include Foveal optics.
12. The method of Claim 10, wherein the fixed optics have a shorter focal length for off-axis objects and a longer focal length for on-axis objects.
13. Apparatus for rapidly acquiring and tracking a threat using a directed countermeasure system without using a two field-of-view system, comprising the step of providing a tracker having fixed optics having a variable focal length, the focal length shorter for off-axis objects and longer for on-axis objects, whereby acquisition times are minimized and alignment problems associated with two field-of-view systems are avoided.

14. The apparatus of Claim 13, wherein the field of view of said fixed optics is wide corresponding to the shorter focal length and is narrow corresponding to the longer field of view.

15. The apparatus of Claim 13, and further including an IR focal plane array or other detector or sensor onto which objects are imaged by the fixed optics.

16. The apparatus of Claim 13, wherein said fixed optics include non-linear optics.

17. The apparatus of Claim 13, wherein said fixed optics include Foveal optics.

18. A directed countermeasure system having a wide field of view for threat acquisition and a narrow field of view for threat tracking, comprising:

a tracker for said countermeasure system having non-linear fixed optics, whereby no moving parts are utilized to provide for the wide and narrow fields of view.

19. The apparatus of Claim 18, wherein said non-linear fixed optics include Foveal optics.

20. The apparatus of Claim 18, wherein said fixed optics have a shorter focal length for off-axis objects and a longer focal length for on-axis objects.